

REMARKS

Claims 26, 29-35, and 37-38 are pending in the application. The Examiner's reconsideration of the rejections is respectfully requested in view of the amendments and remarks.

In this Amendment, Applicant has canceled Claims 1-25, 27-28, and 36 from further consideration in this application and amended Claims 26, 34, and 37. Applicant is not conceding that the subject matter encompassed by Claims 1-38, prior to this Amendment is not patentable over the art cited by the Examiner. Claims 1-25, 27-28, and 36 were cancelled and Claims 26, 34, and 37 amended in this Amendment solely to facilitate expeditious prosecution. Applicant respectfully reserves the right to pursue claims, including the subject matter encompassed by Claims 1-38, as presented prior to this Amendment and additional claims in one or more continuing applications.

Claims 26, and 34 are the pending independent Claims.

Claims 1, 2, 3, and 7 have been rejected under 35 USC 102(b) as being anticipated over Morgan (Eigenmode Analysis of Dielectric Loaded Top-Hat Monopole Antennas). The Examiner stated essentially that Morgan teaches all the limitations of Claims 1, 2, 3, and 7.

Claims 1, 2, 3, and 7 have been canceled. Reconsideration of the rejection is respectfully requested.

Claims 1, 2, 3, 7, and 10 have been rejected under 35 USC 102(b) as being anticipated by Kawahata et al. (US 5,581,262). The Examiner stated essentially that Kawahata teaches all the limitations of Claims 1, 2, 3, 7, and 10.

Claims 1, 2, 3, 7, and 10 have been canceled. The Examiner's reconsideration of the rejection is respectfully requested.

Claims 4-6, 8, 9, and 11-38 has been rejected under 35 USC 103(a) as being unpatentable over Pande et al. (US 6,640,084) in view of Morgan. The Examiner stated essentially that the combined teachings of Morgan and Pande teach or suggest all the limitations of Claims 4-6, 8, 9, and 11-38.

Respectfully, the rejection of Claim 26 and 24 appears to be missing a rationale for rejection; for example, the rejection states that "given Pande's modified by Morgan's integrated communications device..." Applicants are unsure of what teaching of Pande is being modified by Morgan. Respectfully, the rejection fails to make out a *prima facie* case of obviousness.

Further, the references are not believed to be combinable. For example, Morgan teaches a top-hat monopole antenna (see FIG. 1) and Pande teaches a horn type antenna (see FIG. 2). Pande's horn type antenna is not combinable with dipole and monopole antenna. For example, Pande's horn type antenna installed between the ground planes of Morgan would seriously compromise the intended function of Pande by impeding the transmission/reception of radio waves by the horn antenna. References are not properly combinable or modifiable if their intended function is destroyed or rendered inoperable. Thus, Applicants believe that Morgan and Pande are not combinable.

Assuming *arguendo* that the references are combinable please consider the following remarks:

Referring to Claim 26; Claim 26 claims, *inter alia*, “forming a conductive via stub in the substrate extending from the first surface to the second surface, wherein the conductive via stub is a radiating element of the antenna, the conductive via stub having a first diameter exposed at the first surface and a second diameter exposed at the second surface, the second diameter being greater than the first diameter; and a ground plane disposed on the first surface having an opening surrounding the conductive via stub and a contact pad disposed on the conductive via stub within the opening.”

Morgan teaches a top-hat monopole device (see FIG. 7). Morgan does not teach or suggest “forming a conductive via stub in the substrate extending from the first surface to the second surface” as claimed in Claim 26. Morgan’s radiating element does not extend from a first surface of the dielectric to a second surface of the dielectric (Region I in FIG. 1). More particularly, Morgan’s radiating element does not extend to a lower surface of the dielectric. Therefore, Morgan fails to teach all the limitations of Claim 26.

Pande teaches a horn type antenna (see FIG. 2). Pande does not teach or suggest “forming a conductive via stub in the substrate extending from the first surface to the second surface” as claimed in Claim 26. The horn antenna of Pande is not formed in any substrate, much less does it extend from a first surface to a second surface of a substrate. Therefore, Pande fails to cure the deficiencies of Morgan.

The combined teachings of Morgan and Pande fail to teach or suggest “forming a conductive via stub in the substrate extending from the first surface to the second surface” as claimed in Claim 26.

Referring to Claim 34: Claim 34 claims, *inter alia*, “forming an interposer device, wherein forming an interposer device comprises depositing an insulation layer over the substrate of the antenna having the ground plane; depositing a conductive layer over the insulation layer; patterning the conductive layer to form one or more contact pads, transmission lines, or both; forming a plurality of grounding vias in the insulation layer, the grounding vias being electrically connected to the ground plane; and forming a feeding via in the insulation layer, the feeding via being electrically connected to the conductive via stub.”

Morgan teaches a top-hat monopole device (see FIG. 7). Morgan does not teach or suggest “forming an interposer device, wherein forming an interposer device comprises depositing an insulation layer over the substrate of the antenna having the ground plane” as claimed in Claim 34. Nowhere does Morgan teach or suggest a layer formed in the lower portion of the ground plane (see FIG. 1). Therefore, Morgan fails to teach all the limitations of Claim 34.

Pande teaches a horn type antenna having a ground plane 80 (see FIG. 6). Pande does not teach or suggest “forming an interposer device, wherein forming an interposer device comprises depositing an insulation layer over the substrate of the antenna having the ground plane” as claimed in Claim 34. The ground plane 80 of Pande does not have an insulation layer formed on a side away from the substrate (printed circuit board 78). Therefore, Pande fails to cure the deficiencies of Morgan.

The combined teachings of Morgan and Pande fail to teach or suggest “forming an interposer device, wherein forming an interposer device comprises depositing an insulation layer over the substrate of the antenna having the ground plane” as claimed in Claim 34.

Claims 29-33 depend from Claim 26. Claims 35 and 37-38 depend from Claim 34. The dependent claims are believed to be allowable for at least the reasons given for Claims 26 and 34. Reconsideration of the rejection is respectfully requested.

For the forgoing reasons, the present application, including Claims 26, 29-35, and 37-38, is believed to be in condition for allowance. The Examiner's early and favorable action is respectfully urged.

Respectfully submitted,

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